The following claims are presented for examination:

1. (Currently Amended) An apparatus comprising:

a plurality of **IR-transmitting** optical fibers, wherein **[[**:**]]** said optical fibers each hav**e[[**ing**]]** a first end and a second end**[[**;**]], and wherein** said fibers are capable of transmitting infrared radiation ("IR") **generated during decoding of a protein via a binding interaction of the protein with a binding compound**;

a sensor for sensing IR **generated from the binding interaction**, wherein said sensor is in IR-sensing contact with said first end of each of said optical fibers; **and**

a **sliding** separator, wherein said separator engages said plurality of fibers and is **slideable therealong to alter a separation therebetween, wherein the alterable separation facilitates the engagement of the optical fibers with individual samples disposed in wells of any one of a variety of different-sized sample plates having different spacing between the wells** ~~suitable for spatially separating said optical fibers from one another in a pattern that enables said optical fibers to physically engage individual samples on a sample plate~~.

2. (Original) The apparatus of claim 1 further comprising a collar for bundling said optical fibers.

3. (Currently Amended) The apparatus of claim 1 wherein said second end of said optical fibers are physically adapted to receive **the protein** ~~a first chemical entity~~.

4. (Currently Amended) The apparatus of claim 3 wherein said individual samples comprise **the protein** ~~said first chemical entity~~.

5. (Currently Amended) The apparatus of claim 1 further comprising a surface having **[[**a**]] the** binding compound disposed thereon.

6. (Original) The apparatus of claim 1 wherein said first end of said optical fibers are physically coupled to said sensor.

7. (Canceled)

8. (Currently Amended) A method comprising:

physically engaging a chemical entity to a first end of an IR-transmitting **optical** fiber;

bringing said chemical entity in contact with a binding compound; and

conducting a thermal signal resulting from a binding interaction to a thermal sensor through said IR-transmitting **optical** fiber, wherein said binding interaction occurs between said chemical entity and said binding compound.

9. (Original) The method of claim 8 further comprising sliding a separator along said IR-transmitting fiber.

10. (Original) The method of claim 8 wherein engaging a chemical entity further comprises inserting said first end of said IR-transmitting fiber into a sample carrier.

11. (Original) The method of claim 8 wherein bringing said chemical entity in contact with a binding compound further comprises inserting said first end of said IR-transmitting fiber into a well after engaging said chemical entity.

12. (Currently Amended) A method comprising:

positioning a movable separator along a plurality of IR-transmitting **optical** fibers to obtain a desired spacing between adjacent IR-transmitting **optical** fibers at a sampling end thereof;

generating a thermal signal from a binding interaction between a protein and a binding compound, wherein the thermal signal is generated proximal to the sampling end of at least one of the IR-transmitting optical fibers; and

conducting **[[**a**]]** **the** thermal signal through at least one of said IR-transmitting **optical** fibers.

13. (Previously Presented) The method of claim 12 further comprising engaging a chemical entity to said sampling end of said IR-transmitting fibers.

14. (Canceled)

15. (Original) The method of claim 12 wherein conducting a thermal signal further comprises conducting said thermal signal to a thermal sensor.

16. (New) An apparatus comprising:

a plurality of IR-transmitting optical fibers each having a first end and a second end;

a sensor for sensing IR, wherein the sensor is in IR-sensing contact with the first end of each of the optical fibers; and

a sliding separator, wherein the separator engages the plurality of fibers and is slideable therealong to alter a separation therebetween, wherein the alterable separation facilitates the engagement of the optical fibers with individual samples disposed in wells of any one of a variety of different-sized sample plates having different spacing between the wells.

17. (New) A method comprising:

physically engaging a first chemical entity to a first end of a first IR-transmitting optical fiber;

physically engaging a second chemical entity to a first end of a second IR-transmitting optical fiber, wherein the first chemical entity and the second chemical entity are the same chemical entity;

contacting, simultaneously, the first chemical entity with a first binding compound and the second chemical entity with a second binding compound;

conducting, via the first IR-transmitting optical fiber, a first thermal signal resulting from a binding interaction between the first chemical entity and the first binding compound;

conducting, via the second IR-transmitting optical fiber, a second thermal signal, if present, resulting from any binding interaction between the second chemical entity and the second binding compound; and

comparing the first thermal signal and the second thermal signal to one another.